

Claims

- [c1] A broadband light source comprising:
- a pump laser for producing a pump light;
 - a lanthanide series element-doped fiber having a predetermined length which can achieve light amplification by stimulated radiation;
 - a wavelength division multiplexer (WDM) device with at least three ports, first and second ports of said three ports respectively connecting with the pump laser and said fiber; and
 - a first optical isolator and a second optical isolator, the first optical isolator connecting with a third port of the WDM device, the second optical isolator connecting with said fiber, the first and second optical isolators being located in an output passing of the broadband light source for reducing reflection of output light;
- wherein the pump light is coupled to said fiber by the WDM device, the pump light is amplified by said fiber, a part of the amplified light passes the second optical isolator and is exported, and a remaining part of the amplified light is coupled to the first isolator by the WDM device and is exported via an output end of the first isolator.

- [c2] The broadband light source as described in claim 1, wherein said fiber is an erbium-doped fiber.
- [c3] The broadband light source as described in claim 2, wherein the erbium-doped fiber's predetermined length is such that the first and second optical isolators can achieve a same output optical power.
- [c4] The broadband light source as described in claim 1, wherein said fiber's predetermined length is such that the first and second optical isolators can achieve a same output optical power.
- [c5] The broadband light source as described in claim 1, wherein the pump laser comprises a laser diode emitting light having a wavelength of 980 nm.
- [c6] A broadband light source comprising:
a pump laser for producing a pump light;
an erbium-doped fiber having a predetermined length;
a wavelength division multiplexer (WDM) device with at least three ports, first and second ports of said three ports respectively connecting with the pump laser and the erbium-doped fiber;
a first optical isolator and a second optical isolator, the first optical isolator connecting with a third port of the WDM device, the second optical isolator connecting with

the erbium-doped fiber, the first and second optical isolators being located in an output passing of the broadband light source for reducing reflection of output light; wherein the pump light is coupled to the erbium-doped fiber by the WDM device, the pump light is amplified by the erbium-doped fiber, a part of the amplified light passes the second optical isolator and is exported, and a remainder of the amplified light is coupled to the first isolator by the WDM device and is exported via an output end of the first isolator.

- [c7] The broadband light source as described in claim 6, wherein a component which is adapted to be connected to the output end of the first isolator, is not a coupler.